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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,188	02/09/2004	Kia Silverbrook	MTB33US	5408

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EXAMINER	
SOLOMON, LISA	
ART UNIT	PAPER NUMBER
2861	

DATE MAILED: 01/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/773,188	SILVERBROOK, KIA	
	Examiner	Art Unit	
	Lisa M. Solomon	2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 February 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/16/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 12/16/2004 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Drawings

2. The drawings are objected to because on pages 13-14 lines 22 and 18 respectively fig. 3 described as showing thermal bend actuator 28 with arm 44 in more detail, which is inconsistent in that 28 is shown on fig. 10. On page 14 line 9 fig. 3 also described as showing bridge portion 58 is inconsistent in that it is shown on fig. 10. Also on page 14 lines 32-33 fig. 4 described as showing the bending of arms 44 toward substrate 12 is inconsistent in that the behavior is shown on fig. 11. On page 15 line 4 fig. 1 described as showing the arm 44 of the actuator in its starting position is inconsistent in that the behavior is shown in fig. 8. On page 16 lines13-14 layer of titanium 94 and layer of silicon dioxide 96 are described as being shown on figs. 12-13 are inconsistent in that they are shown on fig. 9. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if

only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "12" and "21" have both been used to designate the wafer substrate. (See figs. 8-12,20 for "12" and figs. 2-7 for "21") There is a further inconsistency in that reference character 19 is also used to designate the wafer substrate one page 17 lines 1 and 26. Furthermore, refrence characters "16" and "24" have both been used to designate the passivation layer. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "10" has been used to designate both heater element on pg. 9 line 21(fig. 1) and nozzle on pg. 11 line 23 (figs. 8-9 and 11-12). Reference character "14" has been used to designate both heater on pg. 9 line15 (fig. 1) and drive circuitry layer pg. 12 line 12 (figs. 8-12). Reference character "24" has been used to designate both passivation layer pg. 10 line 13 (figs. 1-7) and sidewalls pg. 12 line 26 (figs. 8-9 and 11-12). Reference character "26" has been used to designate both guard rings pg. 10 line 13 (fig. 2) and ink injection port pg.12 line 27 (figs. 8-9,11-12, and 20). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the

description: 1,6,15,11 pg. 9 lines 14, 19-20 respectively; 28,58 pg.15 line 27; 100 pg. 16 lines 13-14; 102,104 pg. 17 lines 17-19; 112,114,116,118,120,122,124,and 126 pg. 18 lines 8,11-12,14,17-18, and 21 respectively. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The abstract of the disclosure is objected to because the numbers in the abstract should be in parenthesis. Correction is required. See MPEP § 608.01(b).

7. The disclosure is objected to because of the following informalities: on pg.15 line 23 Figures 13 should be Figure 13.

Appropriate correction is required.

Claim Objections

8. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims

are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 32-39 have been renumbered 21-28.

The dependent claims have been amended to reflect the renumbering of the claims.

9. Claims 7 and 8 are objected to because of the following informalities: they depend on themselves. Claim 7 is treated as dependent on claim 6 and claim 8 is treated as dependent on claim 7. Appropriate correction is required.

Double Patenting

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 1-4, 5-28 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20; 31-40 of copending Application No. 10/728,925. Although the conflicting claims are not identical, they are not patentably distinct from each other because it would be obvious to one skilled in the art at the time the invention was made to optimize distance in claims 1-5 in

the copending application for the purposes of maximizing useable space. In addition the limitations set forth in claims 5-28 are met by the language set forth in claims 6-20; 31-40 in the copending Application No. 10/728,925.

12. As to claim 1, An inkjet printhead comprising: a wafer providing a supporting substrate, the wafer having a drop ejection side and a liquid supply side; a plurality of nozzles, each nozzle having a liquid passage leading to it from the liquid supply side of the wafer for providing ejectable liquid to the nozzle; drop ejection actuators and associated drive circuitry corresponding to each nozzle respectively; the nozzles, ejection actuators, associated drive circuitry and liquid passage being formed on and through the wafer using lithographically masked etching techniques; wherein, the liquid passage is partially etched from the drop ejection side such that the distance between the drive circuitry and the passage is less than 20 microns. [Claims 1-2, page 8]

13. As to claim 2, an inkjet printhead according to claim 1 wherein the distance between the drive circuitry and the liquid passage is less than 10 microns. [Claim 2 page 8]

14. As to claim 3, an inkjet printhead according to claim 1 wherein the distance between the drive circuitry and the liquid passage is less than 5 microns. [Claims 2-4, page 8]

15. As to claim 4, an inkjet printhead according to claim 1 wherein the width of the liquid passage is greater than 10 microns and less than 28 microns. [Claim 5, page 8]

16. As to claim 5, an inkjet printhead according to claim 1 wherein the drop ejection actuators are thermal bend actuators. [Claim 6, page 8]

17. As to claim 6, an inkjet printhead according to claim 1 wherein the drop ejection actuators are gas bubble generating heater elements. [Claim 7, page 8]

18. As to claim 7, an inkjet printhead according to claim 6 further including a plurality of nozzle chambers, each nozzle chamber corresponding to a respective nozzle; wherein, at least one the of the gas bubble generating heater elements are disposed in each of the nozzle chambers respectively; such that, a bubble forming liquid can be supplied to the nozzle chamber for thermal contact with at least one of the bubble generating heater elements so that a bubble of the bubble forming liquid generated by one of the heater elements causes a droplet of the ejectable liquid to be ejected from the nozzle. [Claim 8, page 8]

19. As to claim 8, an inkjet printhead according to claim 8 wherein the bubble forming liquid is the same as the ejected liquid. [Claim 9, page 8]

20. As to claim 9, an inkjet printhead according to claim 1 wherein the printhead is a pagewidth printhead. [Claim 10, page 8]

21. As to claim 11, a method of ejecting drops of an ejectable liquid from an inkjet printhead, the printhead comprising a wafer providing a supporting substrate, the wafer having a drop ejection side and a liquid supply side, a plurality of nozzles, each nozzle having a liquid passage leading to it from the liquid supply side of the wafer for providing ejectable liquid to the nozzle, drop ejection actuators and associated drive circuitry corresponding to each nozzle respectively, the nozzles, ejection actuators, associated drive circuitry and liquid passage being formed on and through the wafer using lithographically masked etching techniques; wherein, the liquid passage is partially

etched from the drop ejection side such that the distance between the drive circuitry and the passage is less than 20 microns; the method of ejecting drops comprising the steps of: providing the ejectable liquid to each of the nozzles using the associated liquid passage; and actuating the drop ejection actuator to eject drops of the ejectable liquid from the nozzle. [Claims 11-12, page 8]

22. As to claim 12, a method according to claim 11 wherein the distance between the drive circuitry and the liquid passage is less than 10 microns. [Claim 12, page 8]

23. As to claim 13, a method according to claim 11 wherein the distance between the drive circuitry and the liquid passage is less than 5 microns. [Claims 12-14, page 8]

24. As to claim 14, a method according to claim 11 wherein the width of the liquid passage is greater than 10 microns and less than 28 microns. [Claim 15, page 8]

25. As to claim15, a method according to claim 11 wherein the drop ejection actuators are thermal bend actuators. [Claim 16, page 8]

26. As to claim 16, a method according to claim 11 wherein the droplet ejection actuators are gas bubble generating heater elements. [Claim 17, page 8]

27. As to claim 17, a method according to claim 16 further including a plurality of nozzle chambers, each nozzle chamber corresponding to a respective nozzle; wherein, at least one the of the gas bubble generating heater elements are disposed in each of the nozzle chambers respectively; such that, a bubble forming liquid can be supplied to the nozzle chamber for thermal contact with at least one of the bubble generating heater elements so that a bubble of the bubble forming liquid generated by one of the heater

elements causes a drop of the ejectable liquid to be ejected from the nozzle. [Claim 18, page 8]

28. As to claim 18, a method according to claim 17 wherein the bubble forming liquid is the same as the ejected liquid. [Claim 19, page 8]

29. As to claim 19, a method according to claim 11 wherein the printhead is a pagewidth printhead. [Claim 20, page 9]

30. As to claim 20, a printer system incorporating an inkjet printhead comprising: a wafer providing a supporting substrate, the wafer having a drop ejection side and a liquid supply side; a plurality of nozzles, each nozzle having a liquid passage leading to it from the liquid supply side of the wafer for providing ejectable liquid to the nozzle; drop ejection actuators and associated drive circuitry corresponding to each nozzle respectively; the nozzles, ejection actuators, associated drive circuitry and liquid passage being formed on and through the wafer using lithographically masked etching techniques; wherein, the liquid passage is partially etched from the drop ejection side such that the distance between the drive circuitry and the passage is less than 20 microns. [Claims 31-32, page 9]

31. As to claim 21, a printer system according to claim 20 wherein the distance between the drive circuitry and the liquid passage is less than 10 microns. [Claim 32, page 9]

32. As to claim 22, a printer system according to claim 20 wherein the distance between the drive circuitry and the liquid passage is less than 5 microns. [Claims 32-34, page 9]

33. As to claim 23, a printer system according to claim 20 wherein the width of the liquid passage is greater than 10 microns and less than 28 microns. [Claim 35, page 9]

34. As to claim 24, a printer system according to claim 20 wherein the droplet ejection actuators are thermal bend actuators. [Claim 36, page 9]

35. As to claim 25, a printer system according to claim 20 wherein the droplet ejection actuators are gas bubble generating heater elements. [Claim 37, page 9]

36. As to claim 26, a printer system according to claim 25 further including a plurality of nozzle chambers, each nozzle chamber corresponding to a respective nozzle; wherein, at least one the of the gas bubble generating heater elements are disposed in each of the nozzle chambers respectively; such that, a bubble forming liquid can be supplied to the nozzle chamber for thermal contact with at least one of the bubble generating heater elements so that a bubble of the bubble forming liquid generated by one of the heater elements causes a drop of the ejectable liquid to be ejected from the nozzle. [Claim 38, page 9]

37. As to claim 27, a printer system according to claim 26 wherein the bubble forming liquid is the same as the ejected liquid. [Claim 39, page 9]

38. As to claim 28, a printer system according to claim 20 wherein the printhead is a pagewidth printhead. [Claim 40, page 9]

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa M. Solomon whose telephone number is (571) 272-1701. The examiner can normally be reached on 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David M. Gray can be reached on (571) 272-2119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LMS
01/05/2006